Alaska Student Rocket Project Gets Off the Ground

FOR IMMEDIATE RELEASE
March 19, 2002

Students at the University of Alaska Fairbanks have collaborated with students from Toyama Prefectural University and Tokai University in Japan to prepare a rocket that successfully launched from Poker Flat Research Range Monday afternoon at 12:06 p.m.

The rocket traveled over 50 miles into the atmosphere and was powered by an enhanced Orion rocket motor supplied by NASA's Wallops Flight Facility. The rocket payload was designed and built entirely by university students, with NASA and university personnel providing advice, guidance, and essential flight support functions.

The Alaska Student Rocket Program was created to provide opportunities for university students from around the world to participate in sounding rocket experiments. The students involved in this program work together in interdisciplinary design teams to gain experience in design, construction, testing, launch operations and data analysis of sounding rocket missions. The students attain valuable experience they can use toward additional educational opportunities or to pursue jobs within the commercial arena.

A modular design was used for the rocket payload so that the student-designed components can be easily adapted for use in future rocket projects once retrieved after launch. Students at the University of Alaska Fairbanks developed mechanical and electrical payload components for the rocket, such as a two-stage parachute recovery system, a telemetry transmitter, a Global Positioning System for tracking, and an onboard flight computer. Radio receiver and plasma instruments were developed by students at Toyama Prefectural University to measure the density structure of the ionosphere. Magnetometer and sun-sensor instruments were developed by students at Tokai University to measure the payload attitude relative to the geomagnetic field and the sun.

The Student Rocket Program is a very low-cost program, costing only a fraction of a typical commercial rocket, according to Project Director Joe Hawkins. By working closely with the aerospace industry, the Alaska Student Rocket Program can help to advance the current state-of-the-art in sounding rocket payload design by providing low-cost opportunities for flight testing newly developed components and technologies.

The long-term goal for the program is to create an intensive summer workshop in which university students from all over the world come to Fairbanks for ten weeks to participate in all aspects of a sounding rocket mission. These students return to their home universities to collaborate on future student-built payloads to be launched from Poker Flat in subsequent years.

Poker Flat Research Range is owned by the University of Alaska and operated by the Geophysical Institute under contract to NASA.
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